

Appl. No. 10/787,343  
Atty. Docket No. AA615M3  
Amdt. dated June 20, 2008  
Reply to Office Action of March 20, 2008  
Customer No. 27752

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## REMARKS

### Claim Status

Claims 1-8 and 11-15 are pending in the present application. No additional claims fee is believed to be due.

Claims 9-10 is canceled without prejudice.

Claim 1 has been amended to more specifically claim the invention of the present application. Support for the amendment may be found on page 5, lines 6-10. Claims 1, 3, 4, 5, 7, 11 and 12 have been amended as discussed below.

It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested.

Applicants thank the Examiner for the withdrawal of the rejection of Claims 1-2, 4, 6-8, 11-15 under 35 U.S.C. §103(a) over Loth et al.; claim 3 under 35 U.S.C. §103(a) over Loth et al. in view of Fowler et al.; claim 5 under 35 U.S.C. §103(a) over Loth et al. in view of Baeck et al.; claim 9 under 35 U.S.C. §103(a) over Loth et al. in view of Boehm et al..

### Objection

Claims 1, 3, 4 and 5 have been objected to for:

(a) claim 1, lines 5 and 8; and

(b) claim 3, line 2; claim 4, line 1 and claim 5, line 1.

Applicants have amended the claims as suggested.

### Rejection Under 35 USC §112, Second Paragraph

Claims 7, 11 and 12 are rejected under 35 U.S.C. §112, second paragraph for the phrase "said high viscosity dishwashing composition" in view of claim 1 which recites "high surfactant dishwashing composition".

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Applicants have amended the identified claims to address the rejection.

Rejection Under 35 USC §103(a) Over US 6,114,298 (Petri et al.) alone or in view of US  
4,646,973 (Focaracci)

Claims 1-2, 4-8 and 11-15 have been rejected under 35 USC §103(a) as being unpatentable over Petri et al. alone or in view of Focaracci.

Petri et al. is discusses a microemulsion suitable for disinfecting a surface which may be packaged in suitable detergent packaging. The Office Action further states that the includes "a manually operated foam trigger-type dispensers" as discussed in Col. 6, lines 23-44.

Applicants submit that Petri in Col. 16, lines 23-44 states:

**Packaging Form of the Microemulsions**

The microemulsions herein may be packaged in a variety  
25 of suitable detergent packaging known to those skilled in the  
art. The microemulsions herein may desirably be packaged  
in manually operated spray dispensing containers, which are  
usually made of synthetic organic polymeric plastic mate-  
rials. Accordingly, the present invention also encompasses  
30 microemulsions as described herein before packaged in a  
spray dispenser, preferably in a trigger spray dispenser or in  
a pump spray dispenser.

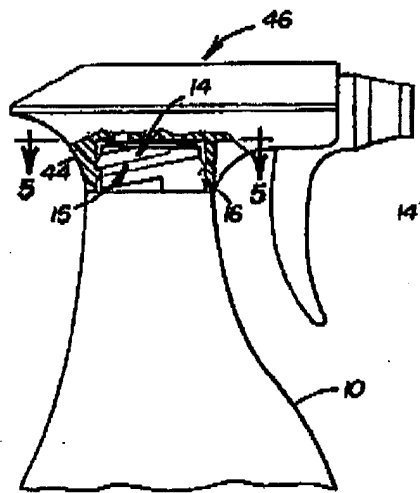
For example, said spray-type dispensers allow to uni-  
formly apply to a relatively large area of a surface to be  
disinfected, the microemulsions of the present invention,  
35 thereby contributing to disinfecting properties of said micro-  
emulsions. Such spray-type dispensers are particularly suit-  
able to treat vertical surfaces.

Suitable spray-type dispensers to be used according to the  
present invention include manually operated foam trigger-  
40 type dispensers sold for example by Specialty Packaging  
Products, Inc. or Continental Sprayers, Inc. These types of  
dispensers are disclosed, for instance, in U.S. Pat. No.  
4,701,311 to Dunnining et al. and U.S. Pat. No. 4,646,973  
and U.S. Pat. No. 4,538,745 both to Focarracci. Particularly

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Applicants submit that upon closer examination, the "foam trigger-type dispensers" in Petri et al. are disclosed in US 4,781,311, US 4,646,973 and US 4,538,745. None of which relate to a foam-generating dispenser includes a gas imparting mechanism to form the foam from air via an air injection piston, foam-generating aperture, an impinging surface, a mesh or net, a pump, and a sprayer.

US 4,781,311 discusses a trigger sprayer having the following structure:



**FIGURE 1**

For completeness, Applicants have reproduced the summary of US 4,781,311 below for all of the preferred and non-preferred embodiments discussed therein.

## SUMMARY AND DISCLOSURE OF THE INVENTION

One aspect of the invention is a cap closure that incorporates a snap-on, snap-off, twist-on, twist-off opening and closing mechanism and also provides accurate alignment of the cap closure with respect to the container.

A second aspect of the invention is to provide a novel cap closure configuration which has a minimum of parts while still performing the

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same functions and is therefore less costly to produce.

A third aspect of the invention is to provide a refillable container and closure which is particularly suited for dispensing liquids by means of a trigger spray mechanism.

Another aspect of the invention is a container cap closure which may be accurately aligned with the neck of the container and, depending on the neck molding, is either removable or irremovable from the container.

These aspects are accomplished by a unique cap closure and varied neck configurations comprising a container with a neck having an inner bore and either external threads or an external annular bead fastener, and vertical stops or walls. A cap closure having an outer annular skirt having inwardly projecting lugs adapted to pass over the threads or bead fastener with axial pressure and to abut the walls upon closure while an annular inner skirt seals the inner bore is provided.

The cap material may be rigid or resilient, but the lugs must be so designed as to spring past the threads or bead fastener when the cap is applied to the neck using axial pressure. When the lugs and cap are made from a rigid material, the material for the threads or bead fastener must be yieldable.

The cap closure can be snapped on and off and twisted on and off when the fastening means are external threads and the walls are located diametrically opposite each other so that they abut the lugs in opposite directions relative to the neck. Upon closure, the top side of each lug interfaces with the under surface of the external threads. Depending on the extent of the interfacing (i.e. not more than 2/3 of the width of each lug's top side), the cap may also be snapped off.

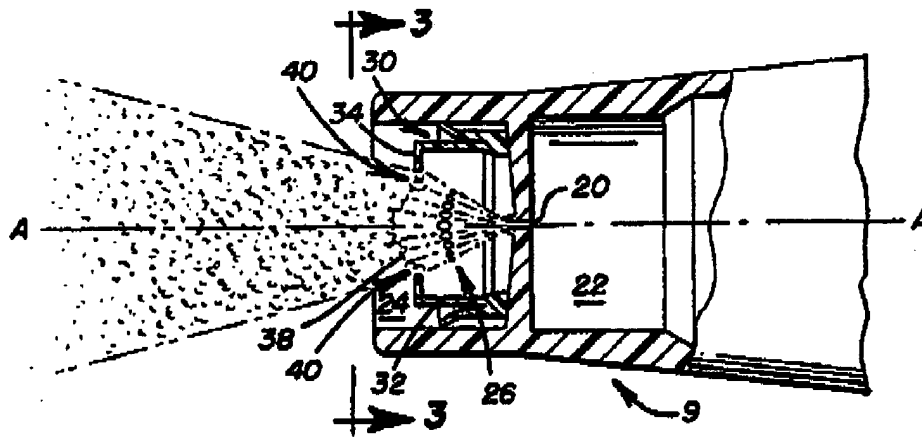
In a second embodiment the fastening means is an annular bead and the interface or engagement between the bead and the lugs is substantially the

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width of the lugs' top sides and the walls on the neck about the lugs in the same direction relative to the neck, the cap closure is irremovable and unyieldingly aligned. In yet another embodiment similar to the first embodiment an additional pair of oppositely facing lugs are provided intermediate the inwardly projecting lugs as will be more fully described hereinafter.

Applicants note that the word "foam" is absent from the specification of US 4,781,311 and therefore Applicants believe that reliance on US 4,781,311 for teaching or suggesting a foam-generating dispenser of the present applicant is misplaced.

Focaracci is referenced in Petri et al. as US 4,646,973, which discusses an impingement foamer having the following structure:



For completeness, Applicants have reproduced the summary of Focaracci (US 4,646,973) below for all of the preferred and non-preferred embodiments discussed therein.

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### SUMMARY OF OBJECTS OF THE INVENTION

The instant foam producing process and apparatus comprises a precision flow interrupter placed in a stream of a continuous flow high pressure atomized liquid. The interrupter acts upon only the outer peripheral portion of the atomized spray stream or cone, treating only the smallest liquid particulate therein. The small particles, upon impingement with the interrupter, reverse direction and impinge upon and agglomerate with larger sized particulate in the main body of the atomized spray. The turbulence created by reversal of the flow direction of the smaller particulate causes a pressure drop which draws in ambient air from downstream of the flow interrupter. The incoming ambient air, in a direction opposite to the main flow of the atomized stream, slows the velocity of the stream while causing aeration of the larger particulate suspension with consequent production of dense, adherent foam moving at low velocity.

The primary object of the present invention is to provide an apparatus and process for quickly, efficiently, and economically creating a large-particulate, viscous foam.

Another object of the present invention is to provide an apparatus having means for impinging upon and interrupting the flow of only relatively small particulate portions of an atomized spray to cause the agglomeration of said small particles into larger particles.

A further object of the present invention is to provide a foam producing apparatus and process which interrupts the peripheral flow of an atomized liquid stream to produce turbulence with consequent low pressure production and induction of ambient air to the stream.

An additional object of the present invention is to provide an apparatus which causes turbulence in a peripheral portion of an atomized stream and causes induction of ambient air from a location downstream of the

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apparatus.

Another object of the present invention is to provide an apparatus for producing foam having a low level of small particulate to reduce vapor phase user irritation and olfactory sensation.

A further object of the present invention is to provide a foam-producing continuous flow spray apparatus which produces a viscous, low velocity foam which does not "bounce back" but rather adheres to a target surface and does not "run" or "drip" from the target area or from the spraying apparatus.

Other objects and advantages of the present invention will become apparent from the following drawing and description.

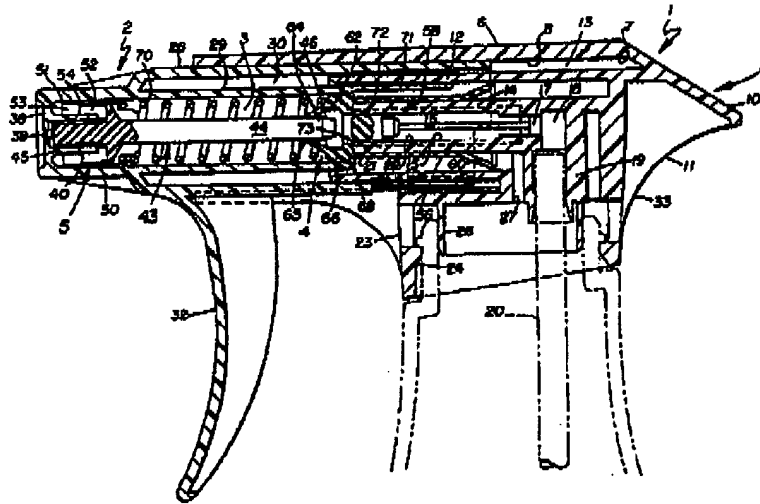
The accompanying drawing shows, by way of illustration only, the preferred embodiment of the present invention and the principles thereof. It should be recognized that other embodiments of the invention, applying the same or equivalent principles, may be used and that structural changes may be made as desired by those skilled in the art without departing from the spirit of the invention.

Where the orifice (38) created by perforation of the face (34) interrupts the liquid flow cone issuing from the atomizer orifice (20). Focaracci (US 4,646,973) further states that there is a critical relationship between the size of the spray cone formed by the atomizer orifice and the size of the interrupter orifice. (Col. 2, lines 47-54). The mixture of fluid in the chamber 26 is emitted from the orifice 38 as large sized particulate, highly aerated low velocity foam. The fluid is delivered through the atomizer orifice from a pressurized receptacle (not shown). (Col. 1, lines 51-62).

Applicants submit that the word "foam" is used in the description of Focaracci. However, the physical structure of how foam is produced, as one skilled in the art would understand it, does not teach or suggest the claimed structure of the Applicants' claimed invention of the present application. As such, reliance upon Focaracci in combination with Petri et al. is also misplaced and the rejection should be removed.

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The final reference referred to in Petri et al., US 4,538,745, discusses a trigger sprayer having the following structure:



For completeness, Applicants have reproduced the summary of US 4,538,745 below for all of the preferred and non-preferred embodiments discussed therein.

### SUMMARY OF THE INVENTION

The trigger sprayer of the present invention includes a housing and an actuator reciprocally slidable within the housing, wherein the housing and actuator provide a pump chamber, inlet and outlet passages in said housing and actuator for communicating fluid to and from the pump chamber, and inlet and outlet valves for controlling flow of fluid in the inlet and outlet passages. The valves include an axial rod member having a frustoconical skirt providing one of the valves and a distal end providing a slidable valve seat for the other of the valves. A flexible tubular member includes a frustoconical portion arranged to cooperate with the distal end of the rod to provide said other valve.

The present invention also provides a shipping seal disposed within a passage leading to the sprayer pump chamber for sealing thereof and



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which is arranged to be displaced from said sealing location upon actuation of the sprayer by the rod member, to allow fluid to flow through the passage. The seal is provided as an integral portion of the flexible tubular member.

The present invention also provides a vent passage valve for control of air flow through the sprayer into a container to which it is coupled. The vent passage valve is provided by another portion of the flexible tubular member.

Applicants note that the word "foam" is absent from the specification of US 4,538,745 and therefore Applicants believe that reliance on US 4,538,745 for teaching or suggesting a foam-generating dispenser of the present application is misplaced.

A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993) [emphasis in original].

As such, Applicants request that the rejection under 35 U.S.C. § 103(a) be withdrawn.

Rejection Under 35 USC §103(a) Over US 6,114,298 (Petri et al.) in view of US 5,635,469 (Fowler) or in view of US 4,646,973 (Focaracci) and US 5,635,469 (Fowler)

Claim 3 has been rejected under 35 USC §103(a) as being unpatentable over Petri et al. in view of Fowler or in view of Focaracci and Fowler.

Applicants refer to the discussion above regarding Petri et al. and Focaracci.

Fowler et al. discusses a nonaerosol dispenser having three meshes. Applicants question why one of skill in the art would make the proposed modification to Loth or Petri et al. as set forth in Col. 16, lines 23-44 which (1) does not refer to a dispenser that generates foam (see US 4,781,311 and US 4,538,745) or (2) discusses a specific structure in a spray nozzle to generate a foam from a cleaning composition (see US 4,646,973) would be combined by in view of Fowler et al. to add three meshes?

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A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993) [emphasis in original].

As such, Applicants request that the rejection under 35 U.S.C. § 103(a) be withdrawn.

Rejection Under 35 USC §103(a) Over US 6,114,298 (Petri et al.) in view of US 3,422,993 (Boehm) or in view of US 4,646,973 (Focaracci) and US 3,422,993 (Boehm)

Claim 9 has been rejected under 35 USC §103(a) as being unpatentable over Petri et al. in view of Boehm or in view of Focaracci and Boehm.

Applicants refer to the discussion above regarding Petri et al. and Focaracci.

Claim 9 has been cancelled in view of the amendment to Claim 1.

#### Double Patenting

Claims 1-9 and 11-15 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-9 and 11-15 of copending Appln. No. 10/787,266 in view of US 5,075,026 (Van Dije et al.).

If an when any patentable subject matter is presented, Applicants shall submit a terminal disclaimer.

Claims 1-2, 11 and 12 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claim 19 and 20 of copending Appln. No. 11/386,921.

If an when any patentable subject matter is presented, Applicants shall submit a terminal disclaimer.

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Conclusion

This response represents an earnest effort to place the present application in proper form and to distinguish the invention as claimed from the applied references. In view of the foregoing, entry of the amendments presented herein, reconsideration of this application, and allowance of the pending claims are respectfully requested. Applicants' attorney invites the Examiner to contact her with any questions the Examiner may have regarding this application. Please note a change in phone number after July 17, 2008.

Respectfully submitted,

THE PROCTER & GAMBLE COMPANY

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